Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) An optical resonator comprising reflector elements and at least one static discontinuous phase element disposed between said reflector elements, said at least one discontinuous phase element having planar regions and at least one sharp discontinuity defining a boundary between said planar regions, said at least one discontinuous phase element being aligned such that said planar regions ~~adapted to~~ introduce a discontinuous phase change to separate regions of field distributions in at least one ~~un~~desired mode propagating in said resonator, ~~and~~ such that said separate regions of said field distributions of said at least one desired mode, after traversing said element, are generally in phase, and said at least one sharp discontinuity being operative to produce a change in the phase of at least one undesired mode of said resonator, and being disposed at a location corresponding to an area of significant intensity of said at least one undesired mode, whereby the divergence of said at least one undesired mode is greater than that of said at least one desired mode and propagation of said at least one undesired mode is suppressed. ~~wherein said at least one discontinuous phase element is aligned such that said at least one sharp discontinuity falls in a region of low intensity of a desired mode propagating in said resonator.~~

2. (Original) An optical resonator according to claim 1, and whose said reflector elements are at least one full reflector and an output coupler.

3. (Previously presented) An optical resonator according to claim 1, and being a passive optical resonator.

4. (Original) An optical resonator according to either of the preceding claims 1 and 2, and being an active optical resonator.

5. (Previously presented) An optical resonator according to claim 1, and being the resonator of a laser.

6. (Previously presented) An optical resonator according to claim 1, and being the resonator of a ring laser.

7. (Previously presented) An optical resonator according to claim 1, and being a stable resonator.

8. (Previously presented) An optical resonator according to claim 1, and being an unstable resonator.

9. (Previously presented) An optical resonator according to claim 1, and wherein said at least one discontinuous phase element is embodied in a reflector of said optical resonator.

10. (Previously presented) An optical resonator according to claim 1, and wherein said at least one discontinuous phase element is embodied in an output coupler of said optical resonator.

11. (Previously presented) An optical resonator according to claim 1, and wherein said at least one discontinuous phase element is positioned adjacent to an optical element of said optical resonator.

12. (Previously presented) An optical resonator according to claim 1, and wherein said at least one discontinuous phase element is placed inside said optical resonator at a defined point which is imaged onto itself from an optical element within the resonator.

13. (Currently Amended) An optical resonator according to claim [[1]] 2, and wherein said at least one discontinuous phase element is positioned adjacent to a flat output coupler of said optical resonator, and the full reflector of said resonator is curved.

14. (Previously presented) An optical resonator according to claim 1, and wherein said at least one discontinuous phase element also provides at least one of angular, linear and radial phase change.

15. (Previously presented) An optical resonator according to claim 1, and also comprising an external discontinuous phase element having at least one sharp discontinuity, operative in addition to said at least one discontinuous phase element disposed between said reflector elements, in order to improve an output beam from said optical resonator.

16. (Canceled)

17. (Previously presented) An optical resonator according to claim 1, and wherein said at least one discontinuous phase element changes the phase of predetermined parts of a desired mode of said resonator, such that generally all parts of the emerging field distribution of said mode are in phase.

18. (Previously presented) An optical resonator according to claim 1, and wherein said at least one discontinuous phase element is disposed such that said at least one sharp discontinuity falls in a region of high intensity of at least one undesirable mode of said resonator.

19. (Previously presented) An optical resonator according to claim 18, and wherein said at least one discontinuous phase element causes the divergence of said at least one undesirable mode in said resonator to be greater than

that of a desired mode, such that propagation of said undesirable mode is decreased.

20. (Currently amended) A method of improving the output beam quality of a laser, comprising the steps of:

providing a laser resonator having reflector elements and a gain medium;

disposing at least one discontinuous phase element between said reflector elements, said at least one discontinuous phase element having planar regions and at least one sharp discontinuity defining a boundary between said planar regions, said at least one discontinuous phase element being aligned such that said planar regions ~~adapted to~~ introduce a discontinuous phase change to separate regions of field distributions in at least one ~~un~~desired mode propagating in said laser resonator such that said separate regions of said field distributions of said at least one desired mode, after traversing said element, are generally in phase, and said at least one sharp discontinuity being operative to produce a change in the phase of at least one undesired mode of said resonator, and being disposed at a location corresponding to an area of significant intensity of said at least one undesired mode, whereby the divergence of said at least one undesired mode is greater than that of said at least one desired mode and propagation of said at least one undesired mode is suppressed.~~; and~~

~~aligning said at least one discontinuous phase element such that said at least one sharp discontinuity falls in a region of~~

~~low intensity of a desired mode propagating in said laser resonator.~~

21. (Previously presented) The method of claim 20, and also comprising the step of selecting said at least one discontinuous phase element such that said laser resonator oscillates in at least one mode having a higher order than the Gaussian mode such that said output beam of said laser has a higher power than that of the Gaussian mode.

22. (Previously presented) The method of claim 21, and wherein said at least one higher order mode is a single mode.

23. (Previously presented) The method of claim 21, and wherein said laser is an unstable resonator laser.

24. (Previously presented) The method of claim 21, and wherein said laser is a solid state laser.

25. (Previously presented) The method of claim 24, and wherein said higher power of said output beam does not limit the dynamic range of said laser.

26. (Previously presented) The method of claim 24, and wherein said at least one discontinuous phase element is selected such that compensation is provided for birefringence distortion introduced by said gain medium.

27. (Previously presented) The method of claim 24, and wherein said at least one discontinuous phase element is selected such that thermal lensing in said gain medium is reduced.

28. (Previously presented) The method of claim 24, and wherein said laser resonator also comprises a non-linear crystal, and wherein said at least one discontinuous phase element is selected and disposed such that the intensity of said resonator mode in said non-linear crystal is generally higher than its intensity in said gain medium.

29. (Canceled)

30. (New) An optical resonator according to claim 1 wherein said at least one discontinuous phase element is disposed such that said at least one sharp discontinuity falls in a region of low intensity of a desired mode propagating in said resonator.